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Current Economic Analysis I-23

Industrial Fishery Products

Market Review and Outlook

Economic and Marketing Research Division
Washington, D.C.

February, 1975

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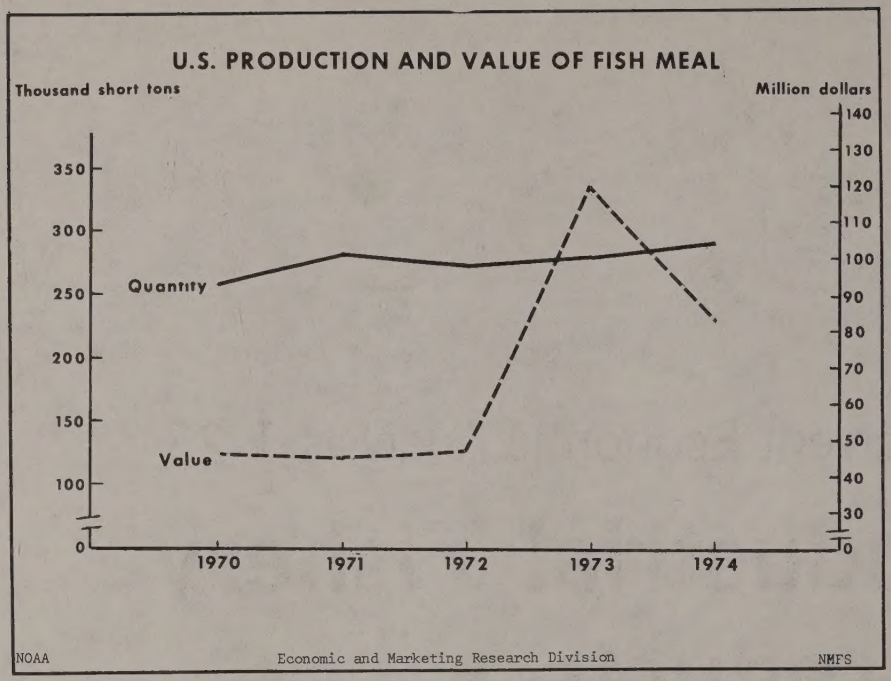

Figure 1

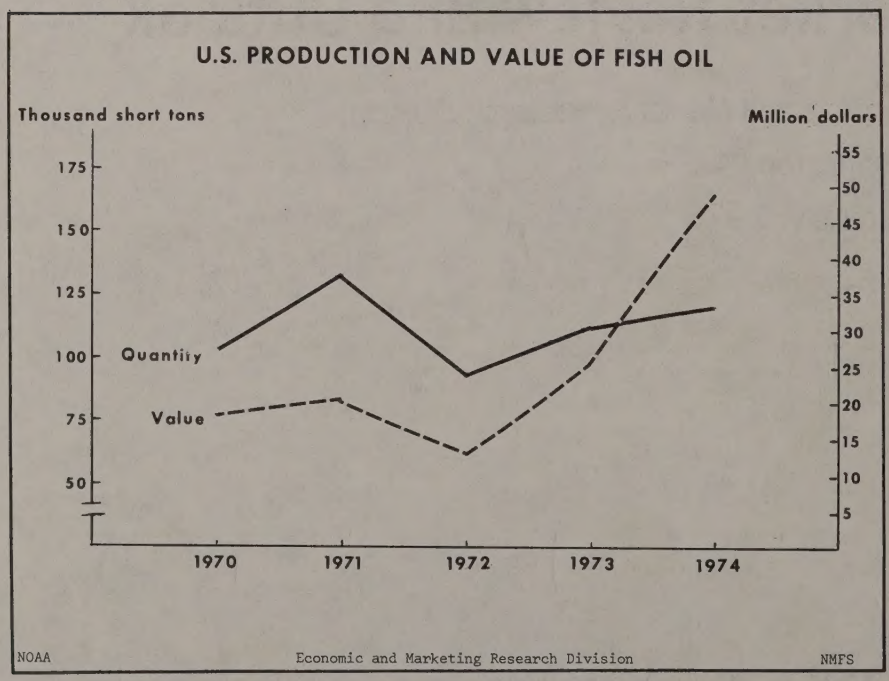

Figure 2

INDUSTRIAL FISHERY PRODUCTS MARKET REVIEW AND OUTLOOK

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SUMMARY

FISH MEAL

The output of the U.S. fish reduction industry improved in 1974, but the value was down.

Supplies of fish meal in 1974 about the same as a year before.

Domestic production highest since 1962.

U.S. imports continued low despite some imports from Peru.

U.S. exports almost equal to imports.

Exports from FEO countries 1/ higher than a year ago because of improvement in Peruvian exports.

FEO stocks higher than a year ago.

Demand for fish meal poor especially at the end of the year.

Broiler numbers down.

Fish meal prices dropped.

Outlook: World supplies of fish meal remain uncertain. Domestic production probably up slightly. Demand likely to continue weak in the first half of 1975 and improve toward the end of the year.

FISH SOLUBLES

Supplies of fish solubles in 1974 down from a year before.

Prices declined, but more slowly than meal.

Outlook: Higher supplies in 1975.

FISH OIL

U.S. production of fish oil in 1974 higher than a year before.

Domestic use highest since 1967.

Exports down.

Prices record high, weakening.

Outlook: Increase in supplies of competing oils. World demand weakening because of recession.

1/ Fishmeal Exporters Organization: member countries are Angola, Chile, Iceland, Norway, Peru and South Africa.

INTRODUCTION

Production of the U.S. Fish Reduction Industry, 1974

The U.S. fish reduction industry increased its output of fish meal and oil in 1974, but produced less solubles. Gains in meal and oil production over the previous year were 4.4 percent and 6 percent, respectively. The decline in the output of solubles was modest.

Despite heavier production of meal and oil, the overall dollar value in the industry was down 10 percent from a year earlier. This decline was the result of a sharp slide in fish meal prices. The market for fish oil, however, was strong. Production gains and higher prices doubled the value of the oil production in 1974 compared with 1973. Production totals for the three components of the fish reduction industry were as follows:

	Quantity 1973	1974	Percentage change
	Thousand tons		Percent
Meal	279.1	291.5	+ 4.4
Oil	112.3	119.0	+ 6.0
Solubles	137.4	134.6	- 2.0
	Value 1973	1974	Percentage change
	Million dollars		Percent
Meal	119.1	83.4	- 3.0
Oil	25.6	49.2	+ 9.2
Solubles	15.4	11.4	- 2.6

Menhaden provided the largest share of output of fish reduction industries. The menhaden industry accounted for about 68 percent of fish meal, 91 percent of oil, and 79 percent of solubles produced in the United States in 1974. The output of the menhaden industry was worth $114.4 million or about 79 percent of the value of the output of the fish reduction industries.

The menhaden fishery is the largest domestic fishery in terms of volume of the catch. In 1974, menhaden landings were 1,913 million pounds, about 40 percent of total U.S. commercial landings.

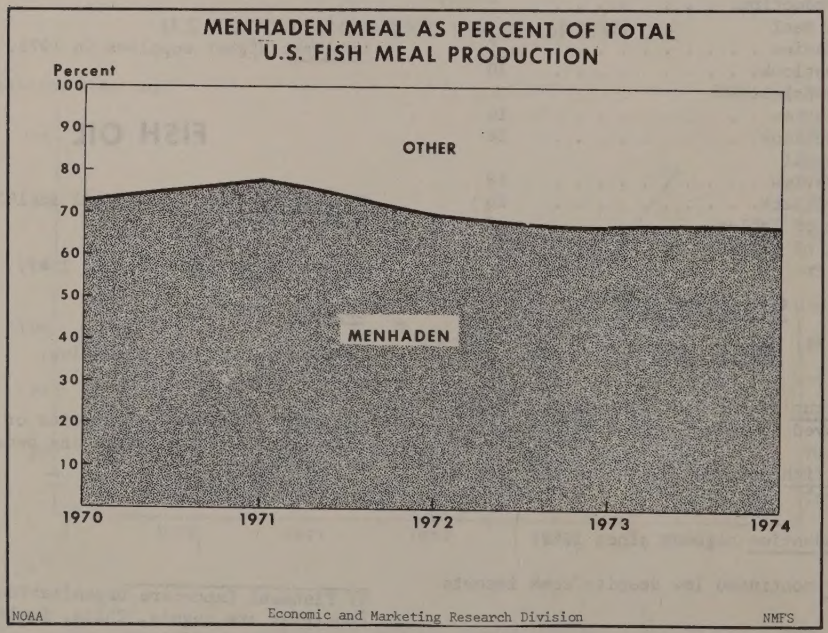

Figure 3

FISH MEAL

REVIEW

Supplies

There was virtually no change in the total amount of fish meal available in the United States in 1974 compared with the exceptionally low 1973 total. Supplies thus remained at about half the 1972 level. The new supplies in 1974 (after deducting exports) were 304,200 tons 2/ compared with 309,700 tons a year before and 655,600 tons in 1972. Supplies were constrained by continuously low Peruvian production and increased exports by United States producers.

Fish Meal Production

Domestic production of fish meal from all sources in 1974 was 291,500 tons compared with 279,100 tons in 1973 (table 1). Meal production from menhaden was 203,900 tons, compared with 188,800 tons a year earlier.

The U.S. menhaden catch in 1974 was about 1.9 billion pounds, slightly above 1973 landings. More than two-thirds of the total 1974 catch was landed on the Gulf coast, where the catch was considerably improved over the previous year.

Production of tuna and mackerel meal and fish meal in the "unclassified" catergory increased in 1974, whereas production of anchovy was down (table 2).

2/ In general, domestic figures are expressed in short tons and foreign figures in metric tons. Short tons are used in this report unless otherwise specified. To convert metric tons to short tons, multiply by 1.1023.

Table 1.--Supplies 1/, production, and imports of fish meal in the United States, by month, 1972-74 2/

Month	Supplies			Production			Imports		
	1972	1973	1974 3/	1972	1973	1974 3/	1972	1973	1974
	Thousand short tons								
January	24.6	10.3	6.9	6.3	3.0	5.9	18.3	7.3	1.0
February	52.9	5.1	6.9	4.7	3.5	5.9	48.1	1.6	1.0
March	51.1	5.4	8.0	5.5	5.0	6.5	45.6	0.4	1.5
April	36.8	18.9	15.3	12.9	12.6	13.2	23.9	6.3	2.1
May	96.2	26.6	33.9	37.0	24.2	31.8	59.2	2.4	2.1
June	90.1	43.9	54.4	38.6	38.7	52.9	51.4	5.2	1.5
July	101.9	68.3	64.1	42.5	56.8	61.4	59.4	11.5	2.7
August	67.6	72.1	54.8	52.4	51.2	49.7	15.3	20.9	5.1
September	47.4	40.5	47.1	29.6	35.1	25.3	17.8	5.3	21.8
October	71.1	26.1	21.6	24.9	21.1	13.7	46.2	5.0	7.9
November	15.9	15.5	32.7	13.6	14.2	14.2	2.3	1.4	18.5
December	10.5	13.8	14.0	6.1	13.8	10.7	4.5	1.2	3.3
Total 4/	666.1	346.4	359.7	274.1	279.1	291.5	392.0	68.5	68.3

1/ Production plus imports; exports not deducted.
2/ Excludes meal made from shellfish.
3/ Preliminary.
4/ Figures may not add to total because of rounding.

Table 2.--U.S. fish meal production by raw material source, 1973-74.

Month	Source				Total 2/
	Menhaden 1/	Anchovy	Tuna and mackerel	Unclassified	
1973	Thousand short tons				
January - Sept.	168.9	10.6	30.5	20.1	230.0
October	10.8	3.6	4.7	2.0	21.1
November	5.9	3.4	3.8	1.0	14.2
December	3.2	4.4	4.5	1.7	13.8
Total 2/	188.8	22.0	43.6	24.6	279.1
1974					
January - Sept.	189.1	5.5	36.3	21.9	252.9
October	7.1	1.4	3.9	1.4	13.7
November	4.6	4.2	4.3	1.1	14.2
December 2/	3.1	3.0	3.7	.9	10.7
Total	203.9	14.1	48.2	25.3	291.5

1/ May include small quantities made from other species.
2/ Figures may not add to total because of rounding.
Note: Data for 1974 subject to revision. Data exclude meal made from shellfish.

Table 3.--U.S. imports of fish meal by country of origin, 1973-74

Time period	Country of origin				Total 1/
	Canada	Peru	Norway	Other	
1973	Thousand short tons				
January - Sept.	17.2	41.8	-	1.9	60.9
October	4.7	-	-	0.2	4.9
November	1.4	-	-	-	1.4
December	1.2	-	-	-	1.2
Total 1/	24.6	41.8	-	2.2	68.5
1974					
January - Sept.	21.4	13.6	3.3	.3	38.6
October	4.0	-	3.9	.1	8.0
November	2.7	15.7	-	2/	18.4
December	2.2	-	-	1.1	3.3
Total 1/	30.3	29.4	7.2	1.4	68.3

1/ Figures may not add to total because of rounding.
2/ Less than 0.05.

Imports and Exports

U.S. imports of fish meal failed to rally in 1974. Imports were only 68,300 tons, almost the same as in 1973, but less than one-fifth of the quantity imported in 1972. However, there was some improvement toward the end of 1974. In September, imports from Peru resumed temporarily after a 1-year interruption, and by year's end Peru had contributed about 43 percent of the total imports in 1974. Canada was the largest supplier, with 44 percent of the total (table 3).

The United States exported almost as much fish meal as was imported in 1974. Exports totalled 55,500 tons compared with 36,700 tons the year before (table 4). The year's total probably would have been considerably higher, were it not for the fast drop in fish meal prices in West Germany, relative to the United States in the latter part of the year. West Germany took about 60 percent of the United States exports of fish meal in 1974.

Production of Fish Meal by Major Exporting Countries

The eight major exporting countries produced an estimated 2.1 million metric tons of fish meal in January-November 1974--up 36 percent from 1973, but still below the 1967-73 average for January-November. The 1974 increase was due to some recovery in Peruvian production, which accounted for almost 43 percent of the total production of the eight countries in January-November 1974. Chilean production also improved. Gains in production of meal in Peru and Chile were

Table 4.--U.S. exports of fish meal, by month, 1972-74

Month	1972	1973	1974
	- - - Thousand short tons - - -		
January	-	3.0	8.9
February	0.3	1.6	8.8
March	.3	2.6	1.1
April	.1	3.0	3.9
May	-	.5	1.9
June	.1	3.2	3.3
July	.3	2.4	7.3
August	.4	1.1	8.9
September	1.9	.8	8.0
October	1.7	3.5	1.7
November	1.8	3.7	1.6
December	3.6	11.3	1.0
Total 1/	10.5	36.7	55.5

1/ Figures may not add to total because of rounding.

Table 5.--Production of fish meal in eight major exporting countries, January-November 1973-74

Country	1973	1974	Percentage of total production: 1973	1974
	- - Thousand metric tons - -		- - - Percent - - -	
Angola 1/	88	55	5.8	2.7
Canada	46	50	3.0	2.4
Chile	46	138	3.0	6.7
Denmark 1/	210	270	13.8	13.1
Iceland 1/	96	98	6.3	4.7
Norway	354	316	23.3	15.3
Peru	411	884	27.1	42.9
South Africa	268	251	17.7	12.2
Total	1,519	2,062	100.0	100.0

1/ Estimated.

the result of improved abundance of anchovies, which were adversely affected by El Nino in 1972.

But the recovery in 1974 was not quite as desired. The catch in Peru for the first part of the calendar year from March to May 15 was about 2.4 million metric tons compared with 1.7 million tons a year before, but slightly less than half of the 5.5 -million-ton average of 1968-72 for the first part of the year.

Fishing continued off the Peruvian coast in October. The initial catch quota was 2.5 million metric tons for the October-December period. Industrial anchovy fishing was stopped by December 2. The total catch for fish meal production in 1974 was 3.87 million tons, of which 3.58 million were anchovies. Thus the catch during the end of 1974 remained below expectations. The total 1974 production of fish meal in Peru was 898,000 metric tons, of which 835,000 tons were anchovy meal.

Exports of FEO Countries

Because of increased production in Peru and Chile, exports of fish meal from these countries were higher in 1974 than in 1973. Exports from all other FEO member countries were down. Peru was the leading exporter. Exports of fish meal from Peru were 578,000 metric tons in January-November 1974, more than half of the total exports of the FEO member countries (table 6A). Although Peruvian exports of fish meal, estimated at 615,000 metric tons for all 1974, were up 75 percent over 1973, they were still only one-third of the 1968-72 average annual exports of 1,775,000 metric tons.

Fish meal exports from Norway were 282,000 metric tons in 1974 down about 14 percent from 1973. Lower exports were due to a lower catch of capelin for industrial purposes.

The major market for fish meal was West Germany, which imported about 303,000 metric tons of fish meal in January-November 1974, nearly 30 percent more than the year before. FEO member countries provided about two-third of these imports. About 12 percent of the fish meal imports of West Germany in January-November 1974 came from the United States.

East European countries took a larger share of exports of FEO member countries in 1974 than in 1973. About 300,000 metric tons went to these countries in January-November 1974. Most of this fish meal came from Peru. A notable decline in FEO export markets took place in the United Kingdom and in the Scandinavian countries in 1974.

Table 6.--Exports of fish meal from FEO 1/countries, January-September 1973-74

Country	1973	1974	Percentage of total exports	
			1973	1974
	-Thousand metric tons-		Percent	
Angola 2/	70	38	8.5	4.7
Chile	24	79	2.9	9.8
Iceland 2/	84	58	10.1	7.2
Norway	287	197	31.1	24.3
Peru	317	406	38.3	50.2
South Africa	75	31	9.1	3.8
Total	827	809	100.0	100.0

1/ Fishmeal Exporters Organization.
2/ Estimated.

Table 6-A.--Exports of fish meal from FEO 1/ countries, January-November 1973-74

Country	1973	1974	Percentage of total exports 1973	1974
	Thousand metric tons		Percent	
Angola 2/	83	50	8.8	4.6
Chile	26	95	2.8	8.7
Iceland 2/	87	64	9.3	5.8
Norway	304	248	32.2	22.6
Peru	350	578	37.2	52.7
South Africa	90	62	9.6	5.6
Total	940	1,097	100.0	100.0

1/ Fishmeal Exporters Organization.
2/ Estimated.

Table 7.--FEO 1/ exports of fish meal, by country of destination, January-November, 1973-74

Country	FEO exports 1973	FEO exports 1974 2/	Percentage of total FEO exports 1973	Percentage of total FEO exports 1974 2/
	Thousand metric tons		Percent	
Belg/Holland	64.2	70.8	6.8	6.5
France	19.9	17.2	2.1	1.6
Germany, West	190.2	229.7	20.2	20.9
Italy	35.3	33.1	3.8	3.0
Portugal	15.3	-	1.6	-
Spain	28.5	37.2	3.0	3.4
United Kingdom	132.8	81.6	14.1	7.3
East European countries	191.6	299.9	20.4	27.3
Scandinavian countries 3/	88.4	41.0	9.4	3.7
United States 4/	22.2	33.2	2.4	3.0
Latin American countries 5/	33.5	38.4	3.6	3.6
Japan	42.0	12.0	4.5	1.1
China	10.9	-	1.2	-
Australia	7.1	16.5	.8	1.5
Other	58.1	185.4	6.1	17.0
Total	940.0	1097.0	100.0	100.0

1/ Fishmeal Exporters Organization.
2/ Preliminary.
3/ Denmark, Finland, and Sweden.
4/ Based on export figures reported by FEO countries.
5/ Includes Cuba.

FEO Stocks

FEO stocks of fish meal grew during 1974. January 1 stocks were below the year before, but by December 1 the stocks exceeded the prior year's level by 150 percent (table 8A). The main reason was the increase in Peruvian stocks of fish meal. The December 1 stocks in most other exporting countries were also above the year-before level. Relatively poor world demand for meal was the main reason for the growing stocks.

Table 8.--FEO 1/ fish meal stocks held October 1, 1973 and 1974

Country	1973	1974	Percentage of FEO total stocks	
			1973	1974
	Thousand metric tons		Percent	
Angola 2/	20	15.5	6.4	2.9
Chile	10	40	3.2	7.9
Iceland 2/	6.4	34	2.0	6.5
Norway	134	154	42.9	29.3
Peru	72	145	23.1	27.6
South Africa	70	137	22.4	26.1
Total	312.4	525.5	100.0	100.0

1/ Fishmeal Exporters Organization.
2/ Estimated.

Table 8.A.--FEO 1/ fish meal stocks held December 1, 1973 and 1974

Country	1973	1974	Percentage of FEO total stocks	
			1973	1974
	Thousand metric tons		Percent	
Angola 2/	18	14	8.1	2.5
Chile	7.6	46	3.4	8.0
Iceland 2/	6	33	2.7	5.8
Norway	108	137	48.3	24.1
Peru	47	257	21.0	45.2
South Africa	37	82	16.5	14.4
Total	223.6	569	100.0	100.0

1/ Fishmeal Exporters Organization.
2/ Estimated.

Demand

The demand for fish meal in the United States in 1974 was generally poor, and the market unsettled. During the first quarter both demand and supplies were light. After menhaden fishing began in April and the price dropped, the consumption increased in the summer. The demand declined again in September for the rest of the year.

The poor demand for fish meal in 1974 appears to be caused by an uncertain market condition that has resulted in a smaller number of broilers on feed. There have also been changes in the feeding practices of the broiler growers. Because of scarce supplies and high prices of fish meal in recent years, the use of fish meal in broiler rations has been reduced. The broiler growers appear to have restricted the use of fish meal to starter rations, where the superior protein qualities of fish meal are most needed. In fattening rations, cheaper vegetable protein are substituted for fish meal.

About 2.2 percent of broiler feed ration in 1974 was fish meal. The quantity is considered the minimum amount of fish meal that a broiler ration must have to benefit from the unidentified growth factor and other unique properties of fish meal. Recent research suggests, however, that increased amount of fish meal in the ration improves the net gain in the growth of broiler 3/.

Broiler Placements

Broiler placements on farms in the leading broiler producing States declined sharply during the last few months of 1974 and offset the gain of the early part of the year (table 9). About 2.9 billion broiler chicks were placed on farms in 1974, sharply less than a year ago. High production costs especially during the fourth quarter of 1974 caused the reduced placements.

The annual average price for broilers in 1974 was lower than in 1973 (table 9). Prices strengthened, however, towards the end of the year when the broiler output declined. Broiler prices at farm averaged 20.9 cents per pound in January, dropped to 18.6 cents in June, and increased to 24 cents per pound in November--4.6 cents above the year before.

3/ Barlow, Stuart M.: "Growth Factors in Fish Meal" International Association of Fish Meal Manufacturers. A speech delivered in the 1975 Symposium of The National Fish meal and Oil Association.

Table 9.--Broiler chick placements in 21 States, and average broiler price at the farm by month

Month	1973		1974		1975	
	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price
	Million	Cents/lb	Million	Cents/lb	Million	Cents/lb
January	226.2	17.2	238.3	20.9	219.4	24.2
February	229.3	19.4	240.2	23.7		
March	306.7	23.3	316.3	22.5		
April	253.6	25.5	251.8	21.2		
May	314.6	23.8	313.6	20.6		
June	247.6	24.5	244.1	18.6		
July	220.1	26.4	214.9	20.4		
August	288.9	37.8	262.3	20.4		
September	217.0	30.3	197.5	22.6		
October	217.4	24.3	188.9	22.5		
November	278.1	19.4	248.4	24.0		
December	229.7	19.3	217.8	21.9		
Total placements and average price	3,028.9	24.3	2,934.2	21.6		

1/ Figures may not add to total because of rounding

Sources: Delmarva Broiler Chick Report, U.S. Department of Agriculture, Statistical Reporting Service, and Poultry and Egg Situation, U.S. Department of Agriculture, Economic Research Service.

Soybean Meal Price

The annual average price for soybean meal (50 percent protein) in 1974 was $153.50 per ton at Decatur, Ill.,--sharply down from the $231.90 per ton average in 1973. However, the average price in 1974 was still 33 percent above 1972. Reduced livestock numbers and increased use of fodder in important consuming areas in the world were the main reasons for lower prices in 1974. Record high carryover stocks in the United States at the beginning of October 1974 added to the price pressures. Most of this influence, however, was offset by the cut in soybean meal production from October on. The average monthly price of soybean meal was at its lowest in June ($110.50 per ton). The December average was $155.80 per ton. However, the January 1975 average price was down to $137.90 per ton, responding to decreasing world consumption and expected larger offers of soybean from Brazil.

The ratio between the price of fish meal and the price of soybean meal fluctuated in 1974, but the decline was not long enough to warrant changes in feeding that would lead to higher percentage use of fish meal in broiler feed. The price ratios in January and February were lower in 1975 than in 1974, but above 1973.

Fish Meal Prices

The average monthly prices of fish meal followed the price trend of soybean meal (fig. 4). The average monthly price of menhaden meal declined during the first half of 1974 and was at its lowest in July ($243.50 per ton). Prices increased in the fall, but declined again from October on because the demand for fish meal was weak. The annual average price for menhaden meal was $275.77 per ton in 1974, down 42 percent from the $478.58 per ton in 1973 (table 12). The annual average in 1974 was still 49 percent above 1972.

Price quotations for Peruvian fish meal began again in the United States at the end of October when imports from that country became available after being interrupted more than 1 year. The prices of Peruvian meal and menhaden meal were close (table 13).

Prices of tuna and mackerel meal declined less rapidly than the prices of menhaden or Peruvian meals. The annual average for 1974 was $271.78 per ton (on 60 percent protein basis), about 32 percent less than 1973. The demand for tuna and mackerel meal on the West Coast area was relatively high, especially during the second half of 1974, and kept the prices relatively steady.

Table 10.--Average monthly prices of soybean meal 1/ at Decatur, Ill.

Month	1973	1974	1975
	Dollars per short ton		
January	210.40	192.40	137.90
February	240.00	175.25	126.90
March	224.90	160.40	
April	228.40	130.40	
May	346.60	120.00	
June	450.00	110.50	
July	346.00	147.10	
August	316.25	165.90	
September	231.90	147.25	
October	175.60	179.80	
November	179.00	154.00	
December	223.00	155.80	
Average 2/	231.90	153.50	

1/ 50 percent protein, bulk.
2/ Average weighted by monthly production of soybean meal and cake.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division

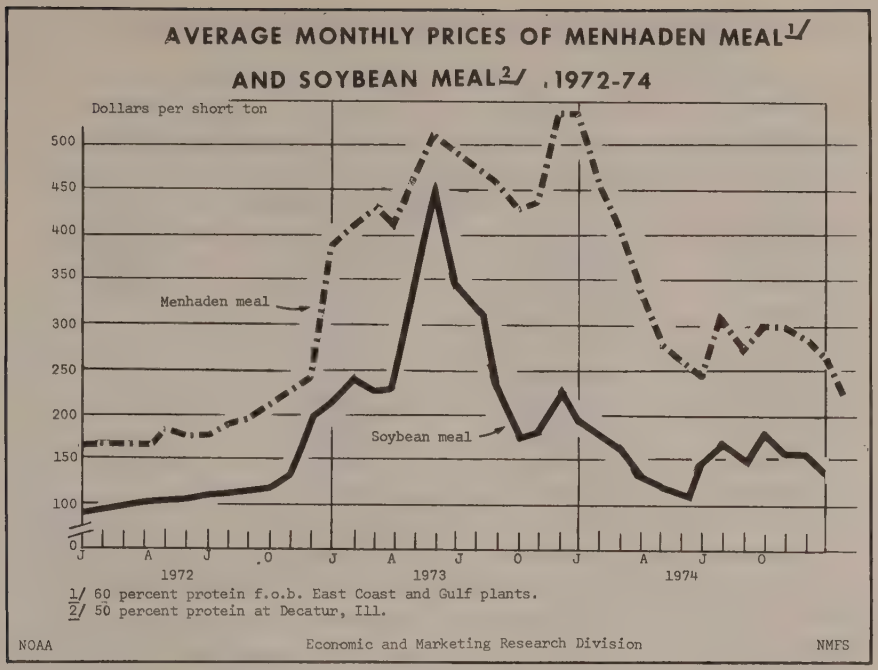

Figure 4

Table 11.--Ratio of Peruvian fish meal price 1/ to soybean meal price 2/, by month, 1973-75

Month	1973	1974	1975
	Price ratio		
January	1.65	3/ 2.77	1.90
February	1.69	3/ 2.58	1.83
March	1.83	3/ 2.52	
April	1.77	3/ 2.62	
May	1.38	3/ 2.28	
June	-	3/ 2.38	
July	1.43	3/ 1.66	
August	1.54	3/ 1.89	
September	3/ 1.96	3/ 1.87	
October	3/ 2.42	1.67	
November	3/ 2.43	1.93	
December	3/ 2.41	1.79	
Average	N.A	N.A	

1/ 65 Percent protein, f.o.b. East Coast ports, as quoted at New York City.
2/ 50 percent protein, bulk, wholesale at Decatur, Ill.
3/ Ratio of menhaden meal price to soybean meal price.

Table 12.--Average monthly price of menhaden meal 1/ f.o.b. East Coast and Gulf plants, 1973-75

Month	1973	1974	1975
	Dollars per short ton		
January	2/ 389.50	2/ 532.50	263.12
February	2/ 410.10	2/ 452.50	231.25
March	2/ 424.10	403.75	220.50
April	2/ 409.50	342.00	
May	457.50	273.10	
June	508.10	263.00	
July	497.10	243.50	
August	473.90	3/ 314.35	
September	456.60	275.50	
October	425.00	301.25	
November	2/ 436.25	297.50	
December	2/ 537.50	281.00	
Average 4/	478.58	275.77	

1/ 60 percent protein, bulk, as quoted by brokers at New York City.
2/ Nominal price.
3/ Asking price.
4/ Average weighted by monthly production of menhaden meal.

Table 13.--Average monthly prices of Peruvian fish meal 1/ f.o.b. East Coast ports, 1973-75

Month	1973	1974	1975
	Dollars per short ton		
January	2/ 347.25	3/ -	262.50
February	2/ 406.25	3/ -	231.90
March	2/ 411.90	3/ -	
April	2/ 405.00	3/ -	
May	2/ 480.00	3/ -	
June	3/ -	3/ -	
July	493.75	3/ -	
August	487.50	3/ -	
September	3/ -	3/ -	
October	3/ -	3/ -	
November	3/ -	297.50	
December	3/ -	278.50	
Average 4/	451.70	-	

1/ 65 percent protein, bulk, f.o.b, East Coast ports.
2/ Nominal price.
3/ Supplies exhausted, no quotes.
4/ Average weighted by monthly imports of Peruvian fish meal.

Table 14.--Average monthly prices of tuna and mackerel meal 1/, at Los Angeles, 1973-75

Month	1973	1974	1975
	Dollars per short ton		
January	187.00	453.00	240.00
February	2/	390.00	226.87
March	360.00	301.88	
April	390.00	274.50	
May	393.80	281.25	
June	468.75	242.25	
July	474.00	207.90	
August	480.00	3/ 296.25	
September	408.75	222.00	
October	309.00	240.00	
November	345.00	240.00	
December	455.62	240.00	
Average 4/	396.35	271.78	

1/ 60 percent protein, bulk as quoted by brokers at Los Angeles.
2/ No quotes.
3/ Asking price.
4/ Average weighted by monthly production.

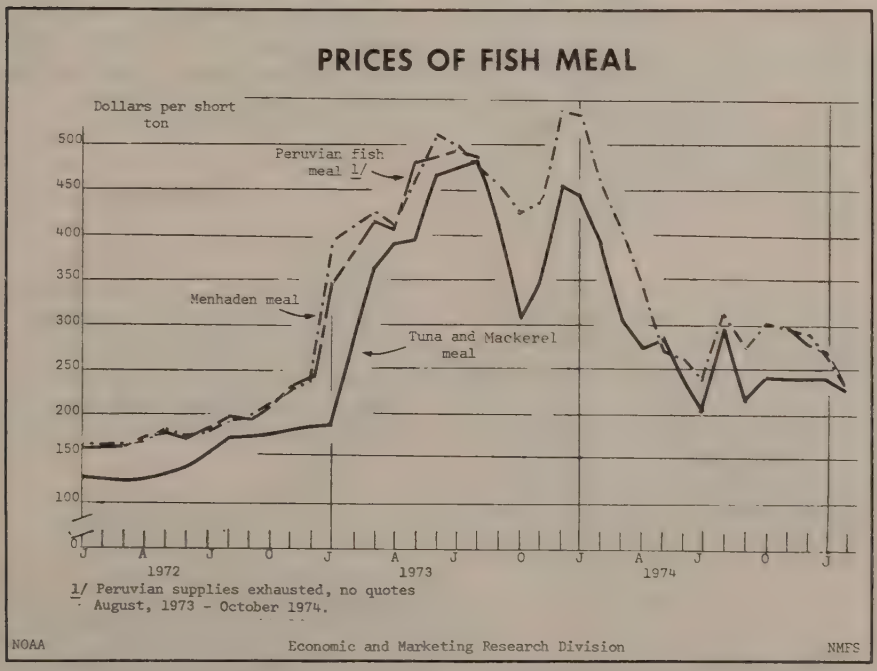

Figure 5

OUTLOOK

Expectations are optimistic for the Peruvian catch of anchovy after March 10, when the second part of the season opens. It appears, however, that at best the Peruvian catch of anchovies for this part of the season may reach 2.5 million metric tons, about half of the catch before the anchovy disappearance. Exploratory fishing in January and February landed an estimated 500,000 metric tons of fish.

A Peruvian output ot 600,000 metric tons of fish meal could thus be possible in January-June, and a total of 1.2 million metric tons for the year 1975. Some scientists 4/ believe, however, that 1975 might have a mild El Nino. If so, the anchovy catch would be large at first, but the catch would drop after the warm water arrives on the Peruvian coast.

The fish meal industry in Norway is also having difficulties because of oceanic changes. Seawater on Norwegian coasts has been warming. Capelin have moved east in the Arctic Ocean to Soviet Union waters. The Norwegian output of fish meal may well suffer because of reduced availability of this important raw material. Denmark's fish meal industry is troubled by a dispute between fishermen and the processors.

Domestic production of fish meal is expected to increase slightly in 1975. A slight increase in the fishing effort is possible, mainly in the western sector of the Gulf menhaden fishery. NMFS Atlantic Estuarine Fisheries Center predicts the catch of Atlantic menhaden to be the same as last year, about 300,000 tons, and the Gulf menhaden about 625,000 to 650,000 tons. Fish meal production in the unidentified category and in the California anchovy fishery is expected to increase.

The availability of competing protein feed, particularly soybean meal, is expected to be down in January-September 1975. The U.S. supply of soybean meal (production plus October 1 stocks) for 1974-75 is predicted at 18.6 to 19.3 million tons, down from the 20 million tons of the previous season. Brazilian supplies of soybean meal will be up from April or May on, however, the Brazilian production of soybean does not make up for the decline in the United States production. U.S. planting intentions for soybean are up about 7 percent for the 1975-76 season; thus, more soybean meal will be available at the end of 1975.

4/Behrman, Dan, Possibility of El Nino in 1975, UNESCO, International Marine Science Newsletter Number 7 Dec. 1974

The demand for fish meal in the first half of 1975 is likely to continue weak. The broiler output in January-June is expected to be about 8 percent less than a year ago. The developments in the early part of 1975 suggest increasingly steady prices for protein feed. This steadiness tends to increase the user's interest in increasing purchases. The possible near-future outcome and impact of the Peruvian and Norwegian supplies are uncertain, but it is likely that world demand for fish meal will exceed the supplies at the current prices.

FISH SOLUBLES

REVIEW

Supplies

Total U.S. supplies of fish solubles (excluding stocks that are not reported) in 1974 were 134,600 tons, slightly down from the previous year. Practically all of the U.S. supplies came from domestic production.

Production of menhaden solubles was 102,300 tons in 1974, compared with 104,400 tons in 1973. Although most producers of menhaden meal made more solubles in 1974 than in 1973, some producers preferred to return more solubles to meal press cake than formerly, causing the relatively low total production of solubles in 1974.

Demand

The annual average price of menhaden solubles was $89.71 per ton in 1974, compared with $134.88 a year before (table 16). The decline in the price of solubles was caused by the decline in the price of menhaden meal. The price of fish solubles declined, however, more slowly than meal, suggesting a steadier market for solubles than for the meal.

OUTLOOK

Supplies of fish solubles in 1975 probably will be higher than in 1974. The price of menhaden solubles compared to the price of meal tends to make more producers sell solubles separately. Supplies of solubles from tuna and mackerel and for unclassified species are likely to increase also because of relatively better price and possible higher production of fish meal.

Table 15.--Total fish solubles available in the United States: production plus imports, by month, 1972-74

Month	1972	1973	1974
	Thousand short tons		
January	2.5	.5	1.7
February	2.1	1.2	1.4
March	2.5	1.3	2.7
April	5.3	5.8	6.1
May	14.4	10.6	12.7
June	19.2	19.8	24.7
July	21.7	25.8	27.8
August	28.1	28.1	24.2
September	12.9	18.3	11.8
October	14.4	10.8	7.2
November	8.3	8.3	8.9
December	2.9	6.9	5.4
Total 1/	134.4	137.4	134.6

1/ Figures may not add to total because of rounding.
Data for 1974 are subject to revision.

Table 16.--Average monthly price of menhaden solubles 1/, f.o.b. East Coast plants, 1972-74

Month	1972	1973	2/ 1974
	Dollars per short ton		
January	2/ 40.40	80.50	159.00
February	38.05	105.50	165.00
March	35.90	115.00	3/ 132.50
April	35.90	111.00	3/ 129.16
May	38.90	126.25	3/ 103.75
June	40.10	142.50	3/ 94.75
July	39.75	139.00	83.00
August	40.60	133.75	86.25
September	42.80	128.50	80.50
October	52.75	3/ 125.00	85.00
November	66.90	3/ 131.25	85.00
December	72.50	3/ 150.00	84.00
Average 4/	43.45	134.88	89.71

1/ In tank cars; prices quoted by brokers at New York City.
2/ East and Gulf Coasts.
3/ Asking price.
4/ Weighted average.

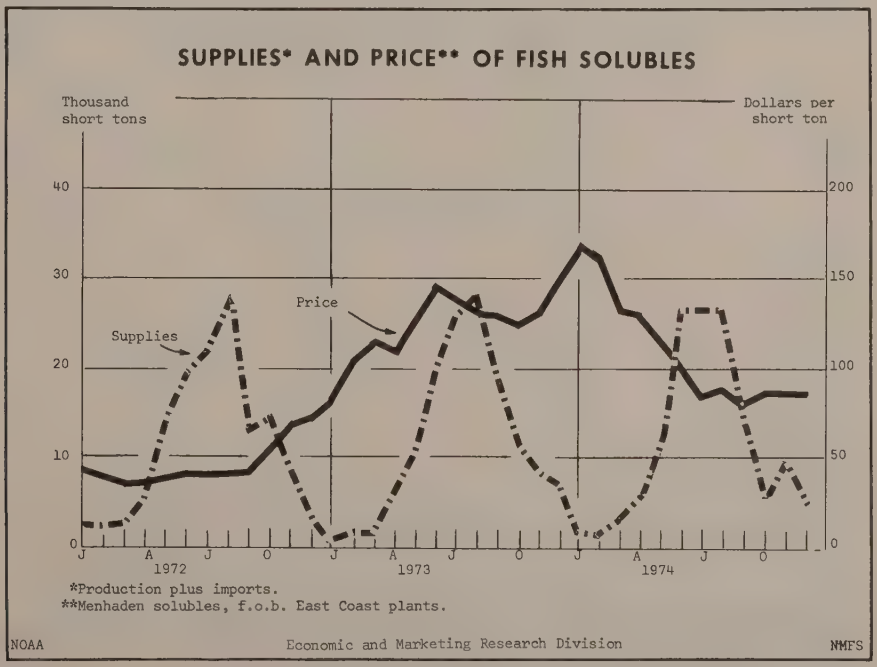

Figure 6

FISH OIL
REVIEW
Supplies

Fish Oil Production

The U.S. fish reduction industry produced 238.4 million pounds (108,400 metric tons) of fish oil in 1974 compared with 224.6 million pounds (102,100 metric tons) in 1973 (table 17). Fish oil production has been relatively high since 1970 and exceeded only by production of the early 1960's. The high level of production was attributed to the increase in menhaden oil, which was 216.4 million pounds (98,400 metric tons in 1974), up 8 percent from 1973. Fish oil production from unclassified species increased also; about 8.5 million pounds (3,900 metric tons) were produced compared with 6.2 million pounds (2,800 metric tons) in 1973. This increase was due to an overall expansion of the use of fish scrap and fish species previously discarded.

Demand

U.S. Use of Fish Oil

Use of fish oil in the United States in 1974 was highest since 1967. About 34.9 million pounds (15,900 metric tons) were used, all for inedible purposes, compared with 25.3 million pounds (11,500 metric tons) in 1973 (table 18). About 30 percent of the oil was used in paint and varnish.

Table 17.--U.S. production of fish oil, by month, 1972-74

Month	1972	1973	1974
	Million pounds		
January	1.4	0.4	0.9
February	0.9	.4	.7
March	.7	.6	.9
April	4.8	4.7	7.0
May	30.8	18.1	30.1
June	28.0	37.2	46.9
July	32.6	58.5	55.4
August	45.5	50.9	54.1
September	23.2	30.2	25.0
October	15.2	15.3	7.3
November	4.3	4.6	6.7
December	1.2	3.7	3.1
Total 1/	188.4	224.6	238.0

1/ Figures may not add to total because of rounding.
Data for 1974 are subject ro revision.

Table 18.--Industrial use of fish oil in the United States, by month, 1972-74 1/

Month	1972	1973	1974 2/
	Million pounds		
January	1.9	2.5	2.0
February	2.5	2.0	2.6
March	2.1	1.9	2.3
April	2.0	1.8	3.4
May	2.3	2.1	3.2
June	2.2	2.1	2.7
July	3.5	2.4	2.8
August	3.7	3.1	3.9
September	2.6	1.8	3.3
October	2.6	1.6	3.6
November	2.4	2.0	2.7
December	2.2	2.0	2.4
Total 3/	30.0	25.3	34.9

1/ Includes marine mammal oil other than sperm oil and some hydrogenated fat (vegetable and animal) and other fats and oils in process.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

Table 19.--U.S. exports of fish oil 1/, by month, 1972-74

Month	1972	1973	1974 2/
	- - - - Million pounds - - -		
January	14.0	6.5	2.3
February	10.3	11.0	1.1
March	0.7	11.1	0.7
April	.9	0.5	0.4
May	5.3	1.0	12.0
June	11.0	25.2	28.0
July	38.3	6.4	53.5
August	2.0	72.6	35.1
September	32.4	26.2	4.8
October	38.0	59.2	49.6
November	6.4	17.5	2.8
December	33.8	11.7	8.8
Total 3/	193.2	248.8	199.1

1/ Excluding whale oil.
2/ Preliminary.
3/ Figures may not add to total because of rounding.

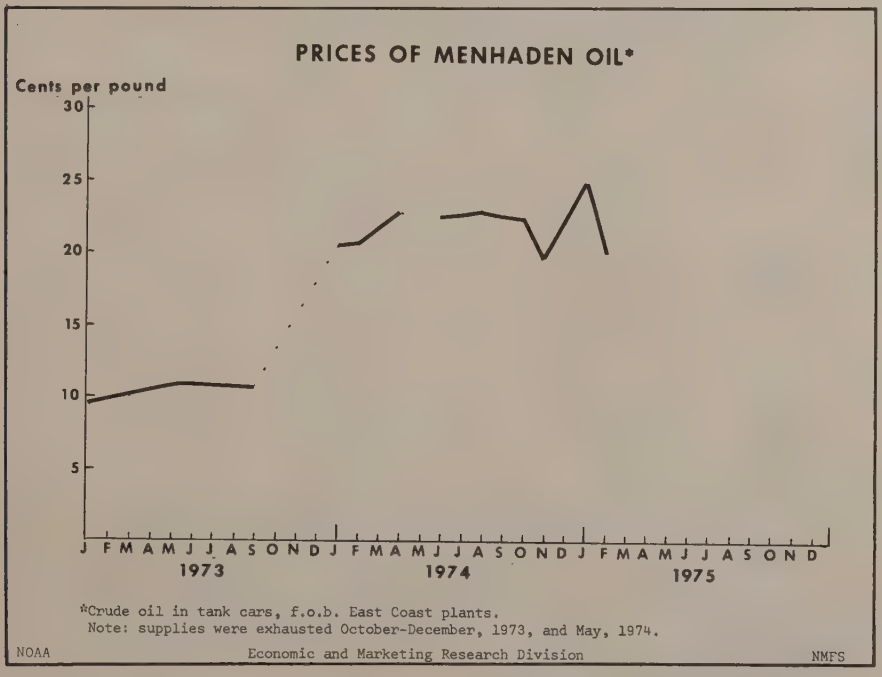
PRICES OF MENHADEN OIL*
Cents per pound
30
25
20
15
10
5
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1973
1974
1975
*Crude oil in tank cars, f.o.b. East Coast plants.
Note: supplies were exhausted October-December, 1973, and May, 1974.
NOAA
Economic and Marketing Research Division
NMFS

Figure 7

Exports

U.S. exports of fish oil in 1974 were 199.1 million pounds (90,500 metric tons)--down 20 percent from 1973 (table 19). About 93 percent of the exports was menhaden oil. During the early months of 1974, U.S. exports of fish oil were low because supplies were exhausted. The menhaden season opened in April, and the production as well as exports were seasonally high during May-October. The decline in exports in November and December was due mainly to increased availability of palm oil and fish oil from competing countries.

Prices of Fish Oil

Fish oil prices in 1974 were double the 1973 price. The annual average price of menhaden oil was 25.4 cents per pound ($558 per metric ton). The highest monthly average was 26 cents per pound ($572 per metric ton) in August (table 20). Prices of menhaden oil weakened slightly towards the end of 1974 and in early 1975. The February 1975 average was 20 cents per pound ($440 per metric ton). Tight supplies of fats and oils in the world markets caused the high prices of fish oil in 1974. However, toward the end of the year increased supplies of fish oil, especially from Peru, weakened the menhaden oil prices. Peruvian production of fish oil was 210,900 metric tons in 1974 compared with 39,000 metric tons in 1973.

OUTLOOK

Menhaden oil supplies are seasonally low in the first quarter of the year. This year supplies were exhausted. Domestic production of fish oil in 1975 likely will not be much higher than the 1974 production of 225 million pounds.

Prices of fish oil are weakening, mainly because of the economic recession and a decline in the consumption of fats and oils in Europe and in the United States. Increased competition from palm oil, lauric oil and possibly Peruvian fish oil will tend to reduce the demand for United States oil in 1975. On the other hand, the expected lower crushings of soybean in the United States before the availability of new crop in the fall will be a strengthening factor.

Table 20.--Average monthly prices of menhaden oil 1/, f.o.b. East Coast plants, 1973-75

Month	1973	1974	1975
	Cents per pound		
January	8.8	21.0	25.0
February	2/ 9.6	21.3	20.0
March	2/ 10.3	23.7	
April	10.9	25.7	
May	11.7	4/ -	
June	3/ 11.9	25.0	
July	11.7	25.4	
August	3/ 11.5	26.0	
September	3/ 11.5	25.1	
October	4/ -	25.0	
November	4/ -	19.6	
December	4/ -	24.3	
Average 5/	11.6	25.4	

1/ Crude oil in tank cars; prices quoted by brokers at New York City.
2/ Nominal price.
3/ Asking price.
4/ Supplies exhausted, no quotes.
5/ Weighted average.

Table 21.--Average monthly price of tuna and mackerel oil 1/, at Los Angeles, 1973-75.

Month	1973	1974	1975
	Cents per pound		
January	5.5	7.1	15.5
February	5.1	9.0	15.5
March	5.5	12.0	
April	5.8	2/	
May	6.3	11.0	
June	6.7	11.0	
July	6.7	12.3	
August	6.9	12.8	
September	7.0	13.0	
October	6.4	14.0	
November	6.5	15.3	
December	6.9	15.4	
Average 3/	6.5	12.3	

1/ Crude oil, f.o.b. plant; prices quoted by brokers at Los Angeles.
2/ Supplies exhausted, no quotes.
3/ Weighted average.

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The Secretary of Commerce has determined that the publication of this Periodical is necessary in the transaction of the public business required by law of this department. Use of funds for printing this publication approved by the Office of Management and Budget, July 26, 1973; this approval expires June 1975.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Washington, D.C. 20235

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